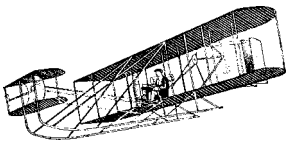


Student Resources and References

Print Material

The following lists of print materials, associations, and web sites simply serve as a reference which offer additional materials and information to the classroom student. These lists are not to be considered an endorsement by NASA Ames Research Center.

Aviation and Space Science Projects
Dr. Ben Millspaugh
Tab Books (A division of McGraw-Hill, Inc.)
New York
ISBN: 0-8306-2157-1

Countdown to Flight!
Steve Englehart
Avon Camelot Book
1995
ISBN: 0-380-77918-8

Cross Sections: Look Inside Planes
Michael Johnstone
Dorling Kindersley
London
1994
ISBN: 1-56458-520-4

How it Works: The Worlds of Flight
Bill Gunston
Barnes and Noble Books
New York, 1997
ISBN: 0-7607-0427-9

The Story of Flight: Scholastic Voyages of Discovery
author unlisted
Scholastic, Inc.
1995
ISBN: 0-590-47643-2

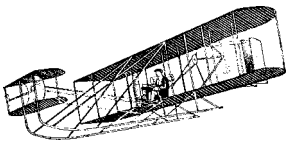
Timelines Flight: Fliers and Flying Machines
David Jefferis
Franklin Watts
New York
1991
ISBN: 0-531-15233-2

The Visual Dictionary of Flight (Eyewitness Visual Dictionary)
Dorling Kindersly Books
London, Great Britain
1992
ISBN: 1-56458-101-2

The Wright Brothers: How They Invented the Airplane
Russell Freedman
Holiday House
New York, 1991
ISBN: 0-8234-0875-2

The Wright Brothers: Pioneers of Aviation
Quentin Reynolds
Landmark Books/ Random House
1978
ISBN: 0-394-84700-8

The Wright Brothers: Pioneers in Change
Richard M. Haynes
Silver Burdett Press, Inc.
1991
ISBN: 0-382-24175-4



Associations

Aerospace Industries Association of America, Inc.
1250 Eye St. NW
Washington, DC 20005

Airline Pilots Association
1625 Massachusetts Ave. NW
Washington, DC 20036

Aircraft Owners and Pilots Association
421 Aviation Way
Frederick, MD 21701

American Institute of Aeronautics and Astronautics
370 L'Enfant Promenade SW
Washington, DC 20024

4-H Aerospace Education
National 4-H Program
U.S. Dept. of Agriculture
Room 38605
Washington, DC 20250

National Air and Space Museum
Public Relations Department
7th St. and Independence Ave. SW
Washington, DC 20560

NASA
Educational Affairs Division
Code XEO, NASA Headquarters
Washington, DC 20546

Web Sites

URL: http://www.eng.fiu.edu/aero/tools.html

Appropriate user: teacher or student

Information offered: Describes the basics of how an airplane flies and how it is navigated. Included are many pictures and diagrams of the fuselage, empennage, landing gear, wings, and the importance of each. The study is divided into the following six chapters: Structure of an airplane, characteristics of the Flight Atmosphere, Principles of Flight, The Four Forces of Flight, Flight Navigation, and Aircraft Propulsion.

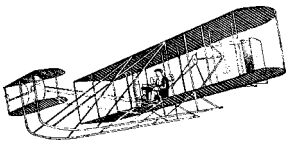
Possible correlation: This URL would be most appropriate for at least eighth grade and above. Teachers would find this valuable as a refresher to the principles of aeronautics as well as a site to access other links, history, and career information on aeronautics.

URL: http://www.lerc.nasa.gov/WWW/K-12/windtunnel.html

Appropriate user: elementary, middle school, or high school teachers

Information offered: The K-12 Wind Tunnel Homepage offers the user access to historical information of wind tunnels, general classroom aeronautics activities, build your own wind tunnel activity, and links to wind tunnels on the web. It provides a very clear explanation of the Bernoulli Principle and the first and second laws of motion, and then has question exercises and Space Mathematics worksheets for students to check understanding.

Possible correlation: The teacher can access activities, experiments, and lesson plans that will help explain some of the basic principle's of aeronautics.



URL: http://www.nasm.edu/GALLERIES/GAL 109/NEWHTF/HTF030.HTM

Appropriate user: elementary and middle school students

Information offered: The How Things Fly homepage is a great URL for elementary and middle school students to browse through and learn about several aspects of flight. Students study how balloons are like boats, why we can't fly like the birds, how a jet weighing thousands of pounds can fly, how air is stuff, and how spacecraft in orbit don't float, but they fall around the Earth. Included at the end of each page is a "Did You Know?" button, when pressed it reveals fun facts relevant to the topic studied.

Possible correlation:This URL provides an interactive and stimulating approach to discovering how things fly for students.

URL: http://www.planemath.com/

Appropriate user: teacher and elementary or middle school students

Information offered: This web site presents math and aeronautics in a fun way. Students can partake on a math lesson that is related to flight. They can create a flight path and find the shortest route between two cities, or look at plane capacity and figure out how many people can board the plane, fly a herd of buffalo to the prairies and evaluate the runway and takeoffs, or embark on a bird's eye view and learn to fly a rescue helicopter. You can go right to the lesson, get some help to get started, check out other web sites, or show a friend how to use this site and have fun learning about math and aeronautics.

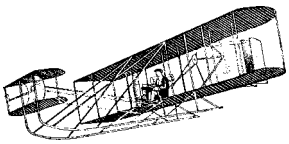
Possible correlation: Teachers can find a list of other places on the world wide web to find math, aeronautics, or disability information. There is also a parent/teacher information site to find a resource list or look at math standards and objectives addressed by the program activities.

URL: http://stega.smoky.org/~dlevin/

Appropriate user: upper elementary to adult

Information offered: This is an intensive, interactive handbook packed with data about over 600 different types of aircraft. The reviews include a description, brief history and technical data.

Possible correlation: Relates to vehicle types and regimes of flight and could be used for additional research on aircraft.



URL: http://www.nasm.edu (National Air and Space Museum)

Appropriate user: upper elementary to adult

Information offered: This virtual museum gives you an excellent look at aviation history. You can view exhibition galleries, educational programs geared for students, and be linked to other NASM resources.

Possible correlation: Visit here to see some of the actual vehicles that made history and to do further research on any of the topics covered in the Exploring Aeronautics unit.

URL: http://www.AerospaceMuseum.org (San Diego Aerospace Museum)

Appropriate user: upper elementary to adult

Information offered: This site has great graphics, well written history section and easy-to-use navigation. It is an excellent exhibit tour that covers the beginnings of powered flight all the way to the space age. If you can't get to the real thing, this on-line museum is great.

Possible correlation: This parallels part of the timeline section of the Exploring Aeronautics unit.

URL: http://www.southwind.net:80/~wknapp/air_cap?

Appropriate user: upper elementary to adult

Information offered: This site gives wonderfully written accounts and informative historical facts about the early aircraft years from 1911-1929. It gives additional information about some of the great aviators of the time.

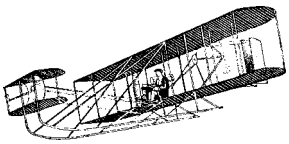
Possible correlation: Additional information for research on other aviators not mentioned in the timeline.

URL: http://hawaii.cogsci.uiuc.edu/invent/airplanes.html

Appropriate user: upper elementary and above

Information offered: This virtual museum tour on the invention of the airplane has fun graphics. It includes a gallery of aviation inventors, photo gallery and a list of relevant readings.

Possible correlation: It relates well with the history section and the regimes of flight. Students could use this as a research resource.



URL: http://www.dfrf.nasa.gov/PhotoServer/photoServer.html

Appropriate user: upper elementary and above

Information offered: This site is filled with digitized delights of over 600 images of aircraft. The archive offers a vast selection of research aviation photos dating back to 1940. It also offers a Dryden fact sheet and flight research projects page.

Possible correlation: Excellent research site for copyright free photos of aircraft. Good as a resource for research on vehicle types.

URL: http://pchelp.inc.net/paper_ac.htm (Paper Airplanes)

Appropriate user: upper elementary and above

Information offered: This is a fun site offering step-by-step directions with diagrams for making paper airplanes.

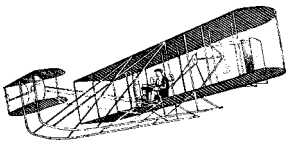
Possible correlation: This is a good teacher resource for free paper airplane making instructions that can be used to illustrate the unit, for art and even to help students with ideas for the culminating air show event.

URL: http://quest.arc.nasa.gov/aero/WrightFlyer.html

Appropriate user: teacher or student

Information offered: This Web site covers the Wright Flyer Project as it relates to NASA. It is under construction, but will ultimately include the history of the project and how it came to Ames Research Center's wind tunnels; some of the people involved in the project; educational material relating to the Wright Brothers and wind tunnel test data; puzzles, activities and contests; a photo gallery and a Frequently Asked Questions page.

Possible correlation: The Web site combines information about the history of flight and NASA Ames' wind tunnels with a focus on education. The Teacher's Lounge contains lesson plans which cut across literature, math, science, social studies and composition.



URL: http://hawaii.cogsci.uiuc.edu/invent/gallery/airphotos.html

Appropriate user: teacher or student

Information offered: This site contains links to photographs and movies about the invention of the airplane. It includes one of the largest collections of Wright photographs ever published in any single source. All still images and movies in this site are public domain.

Possible correlation: These images bring history alive and can be used by students as part of a research project.

URL: http://firstflight.open.ac.uk/flight/april1news.html

Appropriate user: teacher or student

Information offered: Footage of Orville Wright's first flight. The famous photo of the Wright Brothers' first flight was actually taken from the filming of the event.

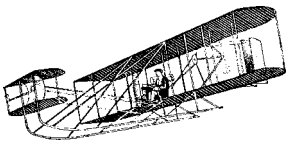
Possible correlation: Historical interest.

URL: http://hawaii.cogsci.uiuc.edu/invent/gallery/movies/WB_onboard.mov

Appropriate user: teacher or student

Information offered: This film was taken in Italy on April 24, 1907. It is the first time a motion picture was ever shot from a plane in flight. The footage shows what it was like to fly on one of the early Wright craft, with Wilbur at the helm. The clip opens with the launching, then the plane climbs, levels off, and passes over the flight grounds.

Possible correlation: Historical interest.



URL: http://www.alumni.caltech.edu/~johnlatz/1903.html

Appropriate user: teacher or student

Information offered: This Web site is authored by the folks who built the replica—the Los Angeles Section of the American Institute of Aeronautics & Astronautics. It gives the background of the Wright Flyer Project,

URL: http://www.wam.umd.edu/~stwright/WrBr/Wrights.html

Appropriate user: teacher or student

Information offered: Biographical information about Wilbur and Orville Wright, along with photographs and a bibliography, are included in this site. It also contains links to articles which were written by the Wright Brothers.

Possible correlation: This site would be useful to a student doing a research project.

URL: http://www.outerbanks-nc.com/wrightbrothers/wrightlc.htm

Appropriate user: teacher or student

Information offered: Wilbur and Orville took more than 300 glass-plate photographs of their expeditions and later travels. These negatives were
donated to the Library of Congress. Many were damaged when Dayton, Ohio was flooded in 1913. The microfiche publication, available in many libraries, is entitled: *Photographs by the Wright Brothers*. This Web site provides a collection of some of these images from the Outer Banks area of North Carolina.

Possible correlation: These images document some of the major and minor events in the Wright Brothers' lives from 1900-1911 and give a flavor of both the time and the places in which these historical events occurred.